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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LY, NGHI H

ART UNIT

PAPER NUMBER

2686

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/348,169	YOSHIDA, YASUHARU	
	Examiner	Art Unit	
	Nghi H. Ly	2686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05/25/2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-36,38-41 and 43-50 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 42 is/are rejected.
- 7) ☒ Claim(s) 37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 1, the newly added limitation in claim 1 recites "*assigning at least two of said M communication frequencies to the N plurality of consecutive time slots*". Therefore, The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 1-3 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'Amico et al (US 5,127,100) in view of D'Amico et al (US 5,159,593) and further in view of Gitlits (US 5,859,841), Barlett et al (US 5,557,603) and Shi (US 6,131,033).

Regarding claim 1, D'Amico et al (US 5,127,100) teaches an automobile communications method for an onboard mobile station in a plurality of radio zones (see abstract) which are consecutively arranged along a road (see fig.1 see cells 22 to 26), comprising: providing each of the radio zones with a plurality of M communication frequencies (see column 3, lines 25-26), and switching between the M communication frequencies (see column 1, lines 17-19 and column 6, lines 24-26, D'Amico et al (US 5,127,100) inherently teaches switching between the plurality of communication frequencies, see column 3, lines 45-47, which clearly states "They can be dynamically changed under the control of central controller 30 based upon communication requirements. The frequency, bit rate and/or time slots of one or more cells can be independently controlled"), and a different one of the N time slots is allocated for adjacent radio zones (see column 3, lines 36-42) for each of the plurality of M communication frequencies (see column 3, lines 36-42 and column 3, lines 25-26).

D'Amico et al (US 5,127,100) does not specifically disclose providing N plurality of time slots in one period in each of the radio zones, switching a time slot allocated to the on-board mobile station to continuously communicate with the on-board mobile station across the plurality of radio zones.

D'Amico et al (US 5,159,593) teaches providing N plurality of time slots in one period in each of the radio zones (see column 2, lines 39-40), switching a time slot

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allocated to the on-board mobile station to continuously communicate with the on-board mobile station across the plurality of radio zones (see column 4 lines 21-24).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention was made to provide the above teaching of D'Amico et al (US 5,159,593) into the system of D'Amico et al (US 5,127,100) in order to reduce channel usage and save bandwidth by each base station.

The combination of D'Amico (US 5,127,100) and D'Amico (US 5,159,593) does not specifically disclose switching between the plurality of communication frequencies within each of the radio zones.

Gitlits teaches switching between the plurality of communication frequencies within each of the radio zones using a time division scheme (see column 1, lines 47-59) using a time division scheme (see column 6, lines 34-50).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention was made to provide the above teaching of Gitlits into the system of D'Amico et al (US 5,127,100) and D'Amico et al (US 5,159,593) in order to reduce co-channel interference.

The combination of D'Amico (US 5,127,100) and D'Amico (US 5,159,593) and Gitlits does not specifically disclose communication between the plurality of radio zones and the on-board mobile station is made using a single one of the M communication frequencies within at least a single radio zone.

Barlett teaches communication between the plurality of radio zones and the on-board mobile station is made using a single one of the M communication frequencies

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within at least a single radio zone (column 4, lines 12-16, see "the base station instructs the mobile to change its time slot with or without change of frequency").

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention was made to provide the above teaching of Barlett into the system of D'Amico et al (US 5,127,100), D'Amico et al (US 5,159,593) and Gitlits so that the mobile station can handover without a change of frequency (see Barlett, column 4, lines 12-16).

The combination of D'Amico et al (US 5,127,100), D'Amico et al (US 5,159,593), Gitlits and Barlett does not specifically disclose a different one of the N time slots is allocated for adjacent radio zones for each of the plurality of M communication frequencies by sequentially assigning at least two of said M communication frequencies to the N plurality of consecutive time slots.

Shi teaches a different one of the N time slots (see fig.3) is allocated for adjacent radio zones (see fig.1b) for each of the plurality of M communication frequencies by sequentially assigning at least two of said M communication frequencies to the N plurality of consecutive time slots (see column 2, lines 59-63 and column 6, lines 61-64).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention was made to provide the above teaching of Shi into the system of D'Amico et al (US 5,127,100), D'Amico et al (US 5,159,593), Gitlits and Barlett in order to reduce internal interference (see Shi, column 2, lines 37-38).

Regarding claim 2, D'Amico et al (US 5,127,100) further teaches the time slot used for communication with the on-board mobile station is switched in such a manner

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that communication with the on-board mobile station is continuously performed at one of the plurality of M communication frequencies over the plurality of radio zones (see D'Amico et al (US 5,127,100), column 3, lines 36-42 or column 6, lines 24-26).

Regarding claim 3, D'Amico et al (US 5,127,100) further teaches the time slot is switched in such a manner that communication with the on-board mobile station is continuously performed at different communication frequencies over the radio zones (see D'Amico et al (US 5,127,100), column 3, lines 36-42 or column 6, lines 24-26).

Regarding claim 42, the modified of D'Amico et al (US 5,127,100), Gitlits, Barlett and Shi teaches the time division scheme (see Gitlits, column 1, lines 47-59 and column 6, lines 34-50). The modified of D'Amico et al (US 5,127,100), Gitlits and Barlett does not specifically disclose each time slot for each radio zone uses a different one of the plurality of M communication frequencies.

D'Amico (US 5,159,593) teaches each time slot for each radio zone uses a different one of the plurality of M communication frequencies (see column 2, lines 39-40 and see column 4 lines 21-24).

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention was made to provide the above teaching of D'Amico et al (US 5,159,593) into the system of D'Amico et al (US 5,127,100), Gitlits, Barlett and Shi in order to reduce channel usage and save bandwidth by each base station.

Allowable Subject Matter

4. Claims 4-36, 38-41 and 43-50 are allowed.

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The following is an examiner's statement of reasons for allowance:

Claims 4, 13, 40 and 45-50 are allowable over the prior art of record for the reasons as stated in the previous Office action dated 10/24/2003 (pages 6-8).

Dependent claims 5-12, 14-36, 38, 39, 41, 43 and 44 are allowable for the same reason.

5. Claim 37 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 37, D'Amico et al (US 5,127,100), D'Amico et al (US 5,159,593), Gitlits, Barlett and Shi, alone or in combination, fails to teaches the plurality of M communication frequencies in each radio zone are generated from a single reference frequency.

Response to Arguments

6. Applicant's arguments with respect to claims 1-3 and 42 have been considered but are moot in view of the new ground(s) of rejection.

On pages 24, 26, 28 and 30-33 of applicant's remarks, applicant argues that "these references would not have been combined and even if combined, the combination would not teach or suggest every and every element of the claimed invention" or "one of ordinary skill in the art would not have been motivated to combine the teachings of the D'Amico et al, the Gitlits and the Barlett references to arrive at the claimed invention".

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to do so is found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art in order to reduce channel usage and save bandwidth by each base station, or in order to reduce co-channel interference, or the mobile station can handover without a change of frequency (see Barlett, column 4, lines 12-16). In addition, Applicant's attention is directed to the rejection of claims 1-3 and 42 above.

On page 30 of applicant's remarks, applicant argues that there is no suggestion to combine the references since the Gitlits' reference does not teach or suggest that frequency hopping reduces co-channel interference.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re*

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Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to do so is found in the knowledge generally available to one of ordinary skill in the art in order to reduce co-channel interference. In addition, in response to applicant's argument that *Gitlits*' reference fails to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *frequency hopping reduces co-channel interference*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi H. Ly whose telephone number is (571) 272-7911. The examiner can normally be reached on 8:30 am-5:30 pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nghi H. Ly

NH Ly
08/04/05

Charles Appiah
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PRIMARY EXAMINER